



**Better Buildings Residential Network  
Peer Exchange Call Series:**  
*Residential Energy Efficiency in a World of Funding  
Constraints*  
May 9, 2019

# Agenda and Ground Rules

- Agenda Review and Ground Rules
- Opening Poll
- Residential Network Overview and Upcoming Call Schedule
- Featured Speakers:
  - **Kai Palmer-Dunning**, Northeast Energy Efficiency Partnerships
  - **Elizabeth Judson**, Elevate Energy
  - **Robin Cox**, Huntsville, AL
  - **Jeremiah LeRoy**, Buncombe County, NC
- Open Discussion
- Closing Poll and Announcements

## Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

*The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.*

# Better Buildings Residential Network

## Join the Network

### Member Benefits:

- Recognition in media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

### Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

### Upcoming Calls (2<sup>nd</sup> & 4<sup>th</sup> Thursdays):

- May 23<sup>rd</sup>: Finding the Balance Between Solar and Energy Efficiency
- Jun 13<sup>th</sup>: Modular Housing, Tiny Homes and What the Future of Homeownership Means for Energy Efficiency
- Jun 27<sup>th</sup>: Making the Most of Home Performance Data

*Peer Exchange Call summaries are posted on the Better Buildings [website](#) a few weeks after the call*

*For more information or to join, for no cost, email*

*[bbresidentialnetwork@ee.doe.gov](mailto:bbresidentialnetwork@ee.doe.gov), or go to [energy.gov/eere/bbrn](http://energy.gov/eere/bbrn) & click Join*



**Kai Palmer-Dunning**  
**Northeast Energy Efficiency**  
**Partnerships**



# Residential Energy Labeling:

## An Essential Tool in a Funding Constrained Market

Kai Palmer-Dunning

May 9, 2019

Better Buildings Residential Network Webinar

# Northeast Energy Efficiency Partnerships



*“Assist the Northeast and Mid-Atlantic region to reduce building sector energy consumption 3% per year and carbon emissions 40% by 2030 (relative to 2001)”*

## Mission

We seek to accelerate regional collaboration to promote advanced energy efficiency and related solutions in homes, buildings, industry, and communities.

## Vision

We envision the region's homes, buildings, and communities transformed into efficient, affordable, low-carbon, resilient places to live, work, and play.

## Approach

Drive market transformation regionally by fostering collaboration and innovation, developing tools, and disseminating knowledge



# About NEEP

A Regional Energy Efficiency Organization



One of six REEOs funded in-part by U.S. DOE to support state and local efficiency policies and programs.

# Pathways to Higher Residential Energy Efficiency



- New construction of high performance homes
- Deep energy retrofits on existing homes
- Utility sponsored energy efficiency programs
- **Residential energy labeling**
- Other pathways

# What is Residential Energy labeling?



- Similar to an ENERGY STAR label but for all energy efficiency information for a home
- Shows energy performance and savings
- Better understand lifecycle cost of a home
- Customizable to allow further energy efficiency recommendations

**ENERGY STAR® Certified in Highlighted Regions**



■ Certified



**World's Best Window Co.**  
Series "2000"  
Casement  
Vinyl Clad Wood Frame  
Double Glazing-Argon Fill-Low E  
XYZ.X-1-00001-00001

ENERGY PERFORMANCE RATINGS	
U-Factor (U.S. / I-P)	Solar Heat Gain Coefficient
<b>0.35</b>	<b>0.32</b>

ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance	Air Leakage (U.S. / I-P)
<b>0.51</b>	<b>≤0.3</b>

Condensation Resistance	
<b>51</b>	<b>—</b>

Manufacturer stipulates that these ratings conform to applicable NIFRC procedures for determining whole product performance. NIFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NIFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information.  
www.nifrc.org

# Green Verification

## Green Certifications

- Recognize homes for achieving specific thresholds, either related to energy features and/or overall performance.
- May have different levels of recognition (e.g., silver, gold, emerald, etc.)
- Popular programs vary by market.



## Energy Labels

- Provide standardized and reliable energy information for any home.
- Compare homes to an accepted standard, such as to building energy codes or average U.S. home energy use.
- Show current state of home's energy assets.



## Verified Energy Improvements

- Provide proof of energy upgrades made to the homes.
- May highlight differences between upgraded homes and non-upgraded homes.
- Does not show whether specific thresholds have been achieved, but may include an estimate of energy savings associated with upgrades.



## Parallel Food Industry Product



**Certified Organic.** Food items must achieve specific standards for verification.



**Nutrition Facts.** Any food item can feature this to clarify its contents in a standardized way.



**Reduced Fat.** Food items can show they are improved from a previous version.

# Why is Residential Energy Labeling Important?



## States

- REL allows for statewide benchmarking to demonstrate effectiveness of residential energy efficiency and set reachable energy goals

## Utilities

- Allows PA to see which energy efficiency programs are most cost effective and beneficial for customers

## Communities

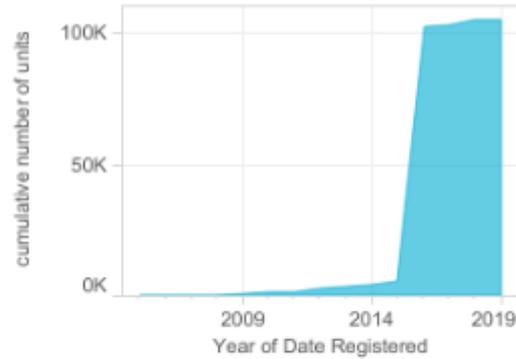
- Clear understanding of how all residential EE pathways lead to energy savings and create opportunities for advocacy

# LEED for Homes Market Brief

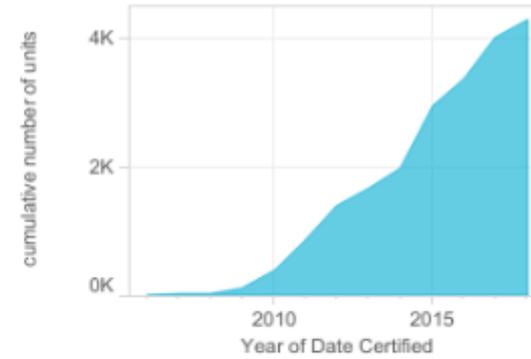
**Summary** 5/3/2019 8:24:13 PM

project status	number of units
currently registered	100,705
certified	4,289
<b>Grand Total</b>	<b>104,994</b>

**Units Registered**



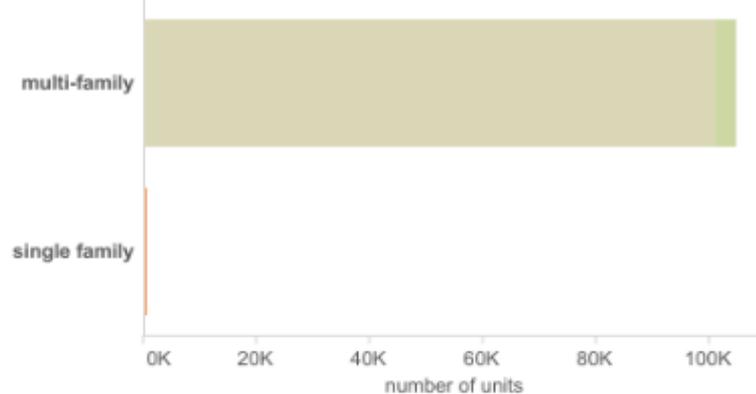
**Units Certified**



**Achievement**



**Project Type**



**Rate Type**



- single family attached
- multi-family mid-rise
- multi-fa
- Affordable
- Multifamily Residential..
- single family detached
- Market

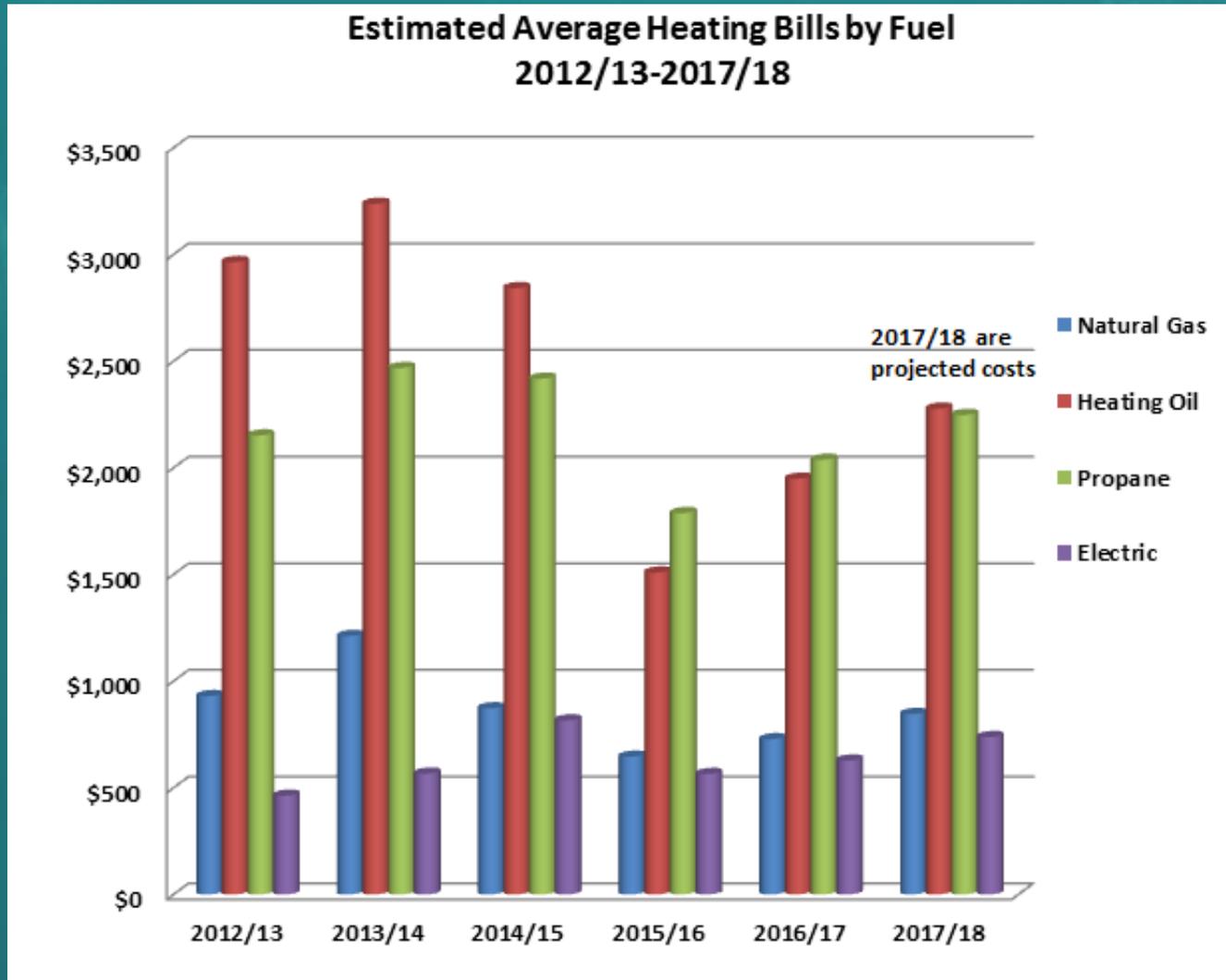
# Benchmarking with HERS-Rated Homes

- 2016: avg. HERS score was 62
- 38% more efficient than home built in 2006
- 2006 home HERS score was 100
- Vermont has lowest avg. HERS score for homes with 43



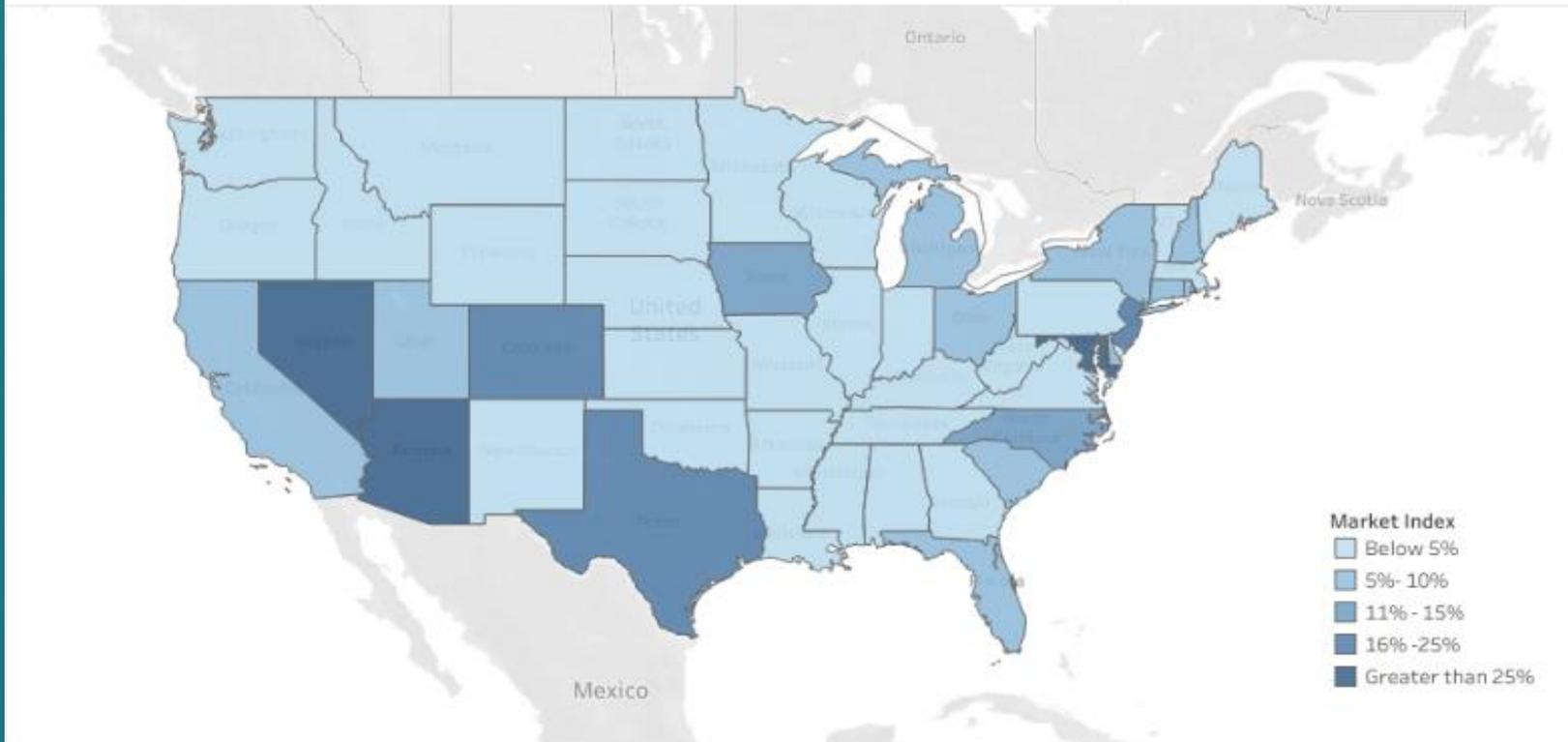
Data source: <https://www.resnet.us/blog/record-number-of-homes-hers-rated-in-2017-over-227000-homes-hers-rated/>

# Why Energy Efficient Homes Matter



# ENERGY STAR Market Share

2017 ENERGY STAR Market Share State Map



Zoom out to view  
Alaska and  
Hawaii.

Click on map to  
filter values below.

**Total ENERGY STAR Homes  
(Single Family)\***

**80,586**

**Total Home Completions  
(1 Unit)\*\***

**811,059**

**ENERGY STAR Market Share**

**10%**

# Driving Market Transformation



As homes becomes more efficient through LEED, RESNET, ENERGY STAR, Passive House, etc. its important to track that information with residential energy labeling in order to drive further market transformation toward a net zero built environment.

# NEEP Resources

- Home Energy Labeling Information eXchange (HELIX)



For more info: <https://neep.org/initiatives/energy-efficient-buildings/green-real-estate-resources/helix>

## Regional Residential Energy Labeling Action Plan (Downloadable PDF)

- Helps jurisdictions implement successful home energy labeling programs and policies
- Address the challenges and provide a pathway forward to overcome barriers



Thank  
you!

Kai Palmer-Dunning  
Buildings and Communities Associate  
[kpunning@neep.org](mailto:kpunning@neep.org)

# Key Points

- Residential energy labeling is a key pathway to savings.
- Similar to an ENERGY STAR label but for all energy efficiency information for a home.
- NEEP has published an action plan to help jurisdictions implement successful home energy labeling programs and policies.



**Elizabeth Judson**  
**Elevate Energy**



# Income Eligible Multifamily and Public Housing Programs

BBRN: Residential Energy Efficiency in a World of Funding Constraints  
May 9, 2019





# Elevate Energy Overview



# Our Mission

We promote smarter energy use for all.



We give people the resources they need to make informed energy choices.



We design and implement efficiency programs that lower costs, and protect the environment.



We ensure the benefits of energy efficiency reach those who need them most.



# Areas of Focus

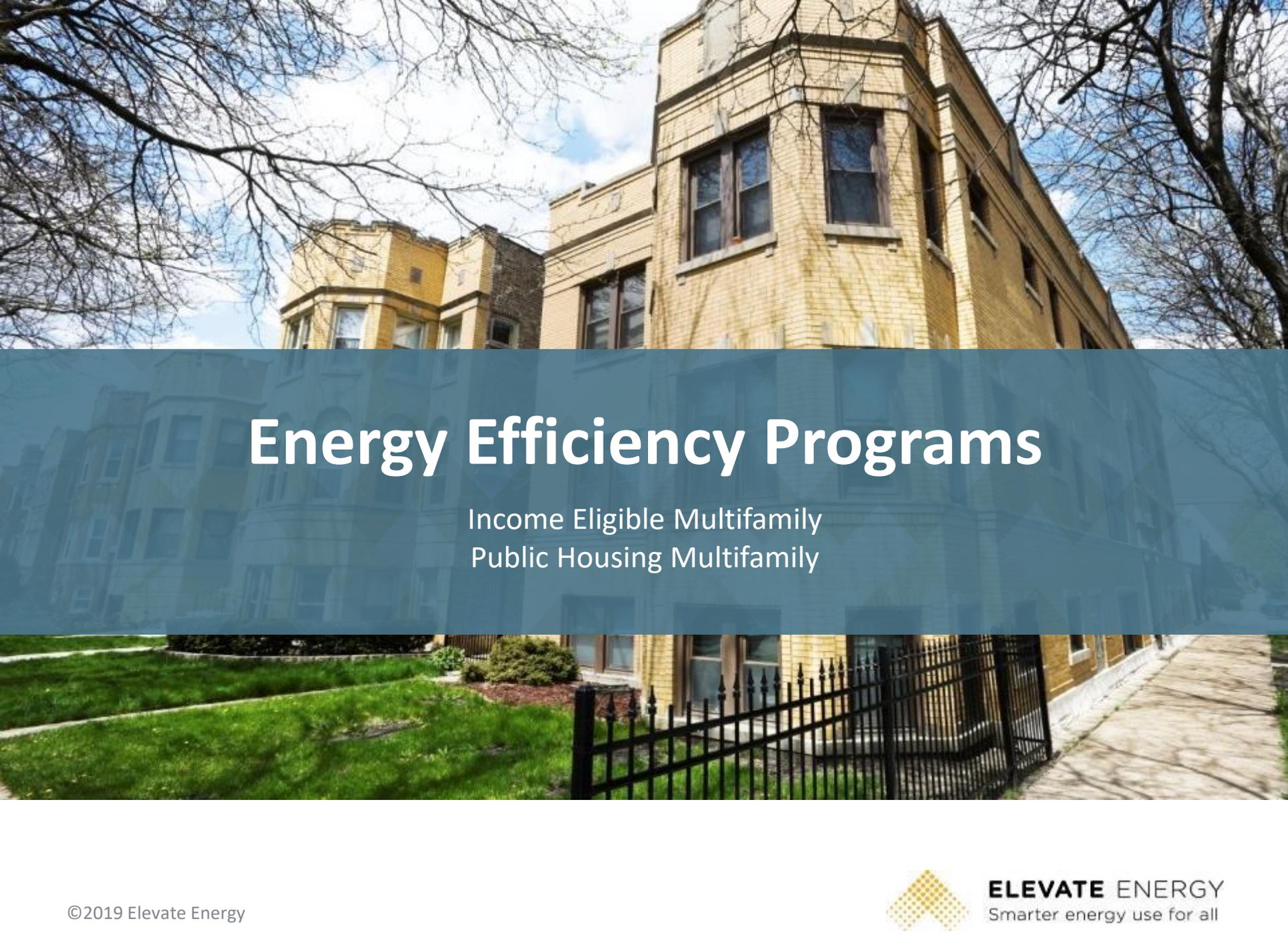
- Smart grid benefits and dynamic electricity pricing in **homes**
- Energy efficient **buildings**
- **Community**-level programs
- Research, policy and innovation



# Illinois Legislative Changes

- The Future Energy Jobs Bill (SB 2814) was enacted on December 7, 2016 changing the delivery of the utilities' energy efficiency programs.
- Public Act 99-0906 allows the investment-owned utilities: ComEd, Peoples Gas, North Shore Gas, Nicor Gas, and Ameren Illinois Electric and Gas to implement the entire energy savings portfolio serving low-income customers.





# Energy Efficiency Programs

Income Eligible Multifamily  
Public Housing Multifamily



# Income Eligible Multifamily and Public Housing Programs

- Program Inception: 2018
- Participating utilities: ComEd, People's Gas, Nicor Gas (PHA only), North Shore Gas

## What is it?

- As a result of Future Energy Jobs Act (FEJA), ComEd now offers Income Eligible and Public Housing EE programs.
- Provides technical and financial assistance to help income eligible property owners/managers and Public Housing Authorities make energy efficiency improvements.



# IEMS General Information

<b>Implementation Contractor (IC)</b>	Elevate Energy
<b>Project Manager</b>	Louise Sharrow
<b>Geography</b>	ComEd territory (includes electric, gas & joint measures)
<b>Eligibility</b>	<ul style="list-style-type: none"><li>• 3+ residential units</li><li>• Active ComEd account numbers</li><li>• Income-Eligible/Affordable Housing: below 80% AMI</li><li>• Elevate assessment conducted</li></ul>
<b>Funding</b>	Incentives from ComEd, Peoples Gas, North Shore Gas
<b>Additions</b>	Health & Safety budget
<b>Contact</b>	<a href="mailto:Multifamily@ElevateEnergy.org">Multifamily@ElevateEnergy.org</a>



# PHES General Information

<b>Implementation Contractor (IC)</b>	Elevate Energy
<b>Program Manager</b>	Kate Brown
<b>Geography</b>	ComEd territory (includes electric, gas & joint measures). Nicor only territory.
<b>Eligibility</b>	<ul style="list-style-type: none"><li>All PHAs located in ComEd, Nicor, Peoples and North Shore Gas Service geography areas.</li></ul>
<b>Funding</b>	Incentives
<b>Additions</b>	None
<b>Contact</b>	PublicHousing@ElevateEnergy.org



# 2019 IEMS and PHES Program Purpose

- Full-service programs
  - FREE Energy assessments
  - Direct install in-unit and common areas
  - Energy efficiency incentives – electric and gas measures, in-unit and common area
  - Contractor and admin support
  - Quality inspections
  - Assistance with project leveraging



# IEMS PHES Program Overview

- 100% covered by utility incentives:
  - In unit LEDs, aerators, showerheads, thermostats
  - Common area and exterior lighting
  - Weatherization (roof and wall air sealing and insulation, pipe insulation)
- Partially covered by incentives:
  - Refrigerators
  - HVAC Equipment (boilers, ACs, furnaces, tune-ups, etc.)

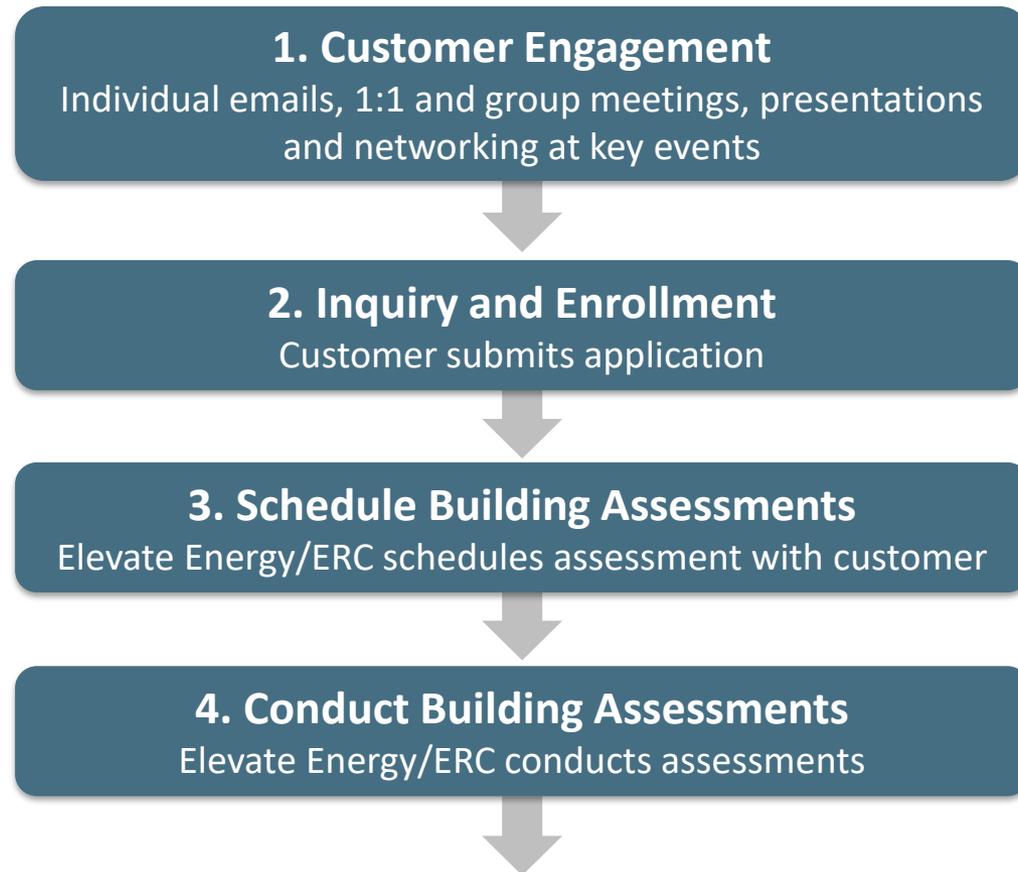


# What's new in 2019?

- Free Installation of smart Nest Thermostats E
- In residential units and common areas
- Can be controlled by a smartphone



# Customer Journey: Engagement to Installation



# Customer Journey: Engagement to Installation



# PHES & IEMS

## 2018 Case Studies



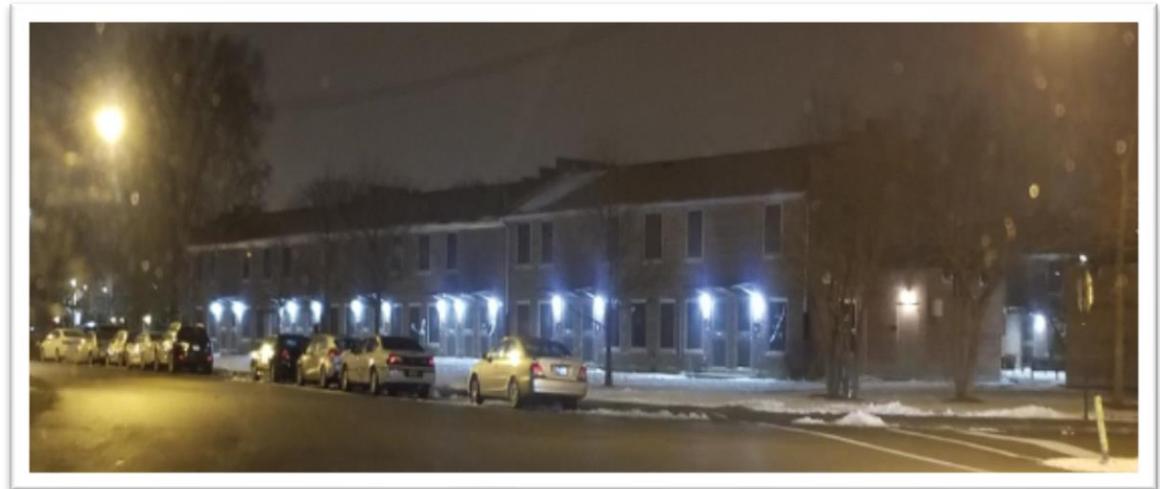
# Altgeld Gardens (Chicago Housing Authority)



*Before PHES Installations*

**Q3-Q4 2018:** Outdoor lighting retrofits and direct install services completed in 4 phases at Altgeld

- Incentives: \$466,321
- kWh Savings: 1,071,709; Therm Savings: 6,590



*After PHES Installations*

“Altgeld looks much brighter...thanks for all your assistance and dedication with the common area lights.”

*-Ms. Brown-Lukes, Property Supervisor*



# Blackhawk Courts (Rockford Housing Authority)



*Blackhawk Courts Site*

## **Q4 2018 – Q1 2019:**

Furnace replacements, ECMs, programmable thermostats, air sealing/insulation, and lighting work at Blackhawk

- Incentives: \$969,054
- kWh Savings: 286,065
- Therm Savings: 73,365

“... I really don’t have the words, but I am humbled by how all of the stakeholders came together to make this happen ... THANK YOU to everyone involved in the process.”

*-Mr. Chuck Doyle, Physical Asset and Quality Assurance Manager*



# Customer Impact

Income Eligible

- Catholic Charities, nonprofit portfolio owner
- **11** properties (875 senior and family units) completed TAPI work in 2018
- **\$276k** incentives; **631,165** kWh savings



# Questions?

Louise Sharrow | [louise.sharrow@elevateenergy.org](mailto:louise.sharrow@elevateenergy.org)

Kate Brown | [kate.brown@elevateenergy.org](mailto:kate.brown@elevateenergy.org)

Elizabeth Judson | [Elizabeth.judson@elevateenergy.org](mailto:Elizabeth.judson@elevateenergy.org)



# Key Points

- Income eligible multifamily and public housing programs are attractive pathways for realizing energy savings.
- Illinois' Future Energy Jobs Act enabled utilities to provides technical and financial assistance to help income eligible property owners/managers and Public Housing Authorities make energy efficiency improvements.
- One such project, encompassing 875 senior and family units, delivered savings of 631,165 kWh.



**Robin Cox, Huntsville, AL**  
**Jeremiah LeRoy, Buncombe County, NC**

# Residential Energy Efficiency in a World of Funding *(and other social & economic) Constraints*

Introductions:

Robin Cox, Huntsville, Alabama

Jeremiah LeRoy, Buncombe County NC

and

Meg Jamieson, Southeastern Sustainability

Directors Network Executive Director



**BBRN Peer Exchange Call**  
**May 9<sup>th</sup> 2019**



## Summary - Low Cost Approaches and Why it was Necessary?

- Welcome to the South: ‘Bless your Heart’
- Networks as Self-Help Groups (SSDN)
- Examples from Huntsville and Buncombe Co
  - Coalition Building within your Community
  - The Use of Competitions to Get Things Moving
  - Aligning Vision & Resources for Increased Impact  
when the EE Money Flows
  - Building Upon Early & Inexpensive Success



**SOUTHEAST SUSTAINABILITY  
DIRECTORS NETWORK**

## How are we different?

### Networks....

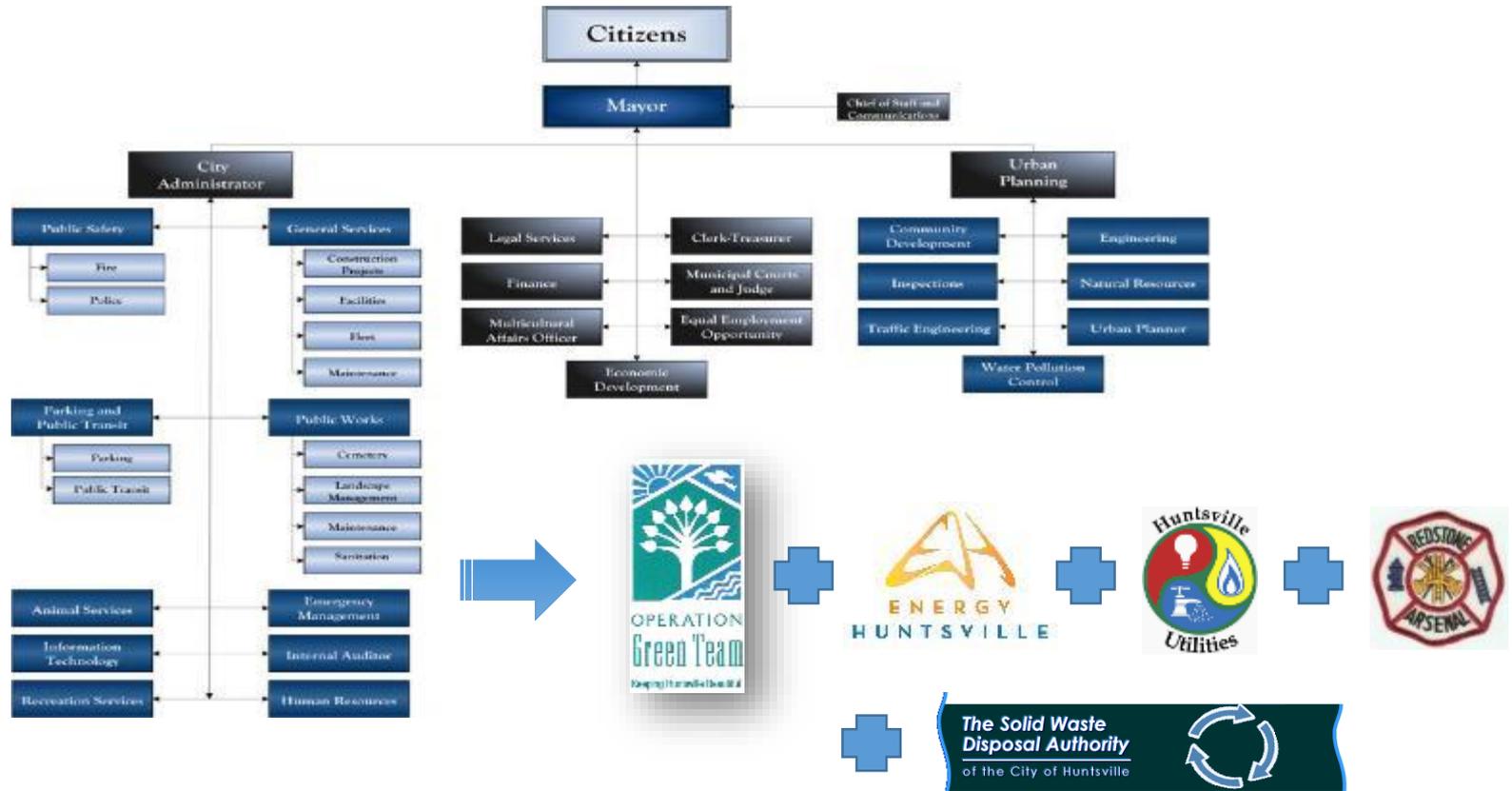
#### ....**Make/keep Commitments** -

Networks are groups of individuals who solve difficult but similar problems by working together over time.

....**Built on Trust** - Members lead and direct activities based on trusting relationships

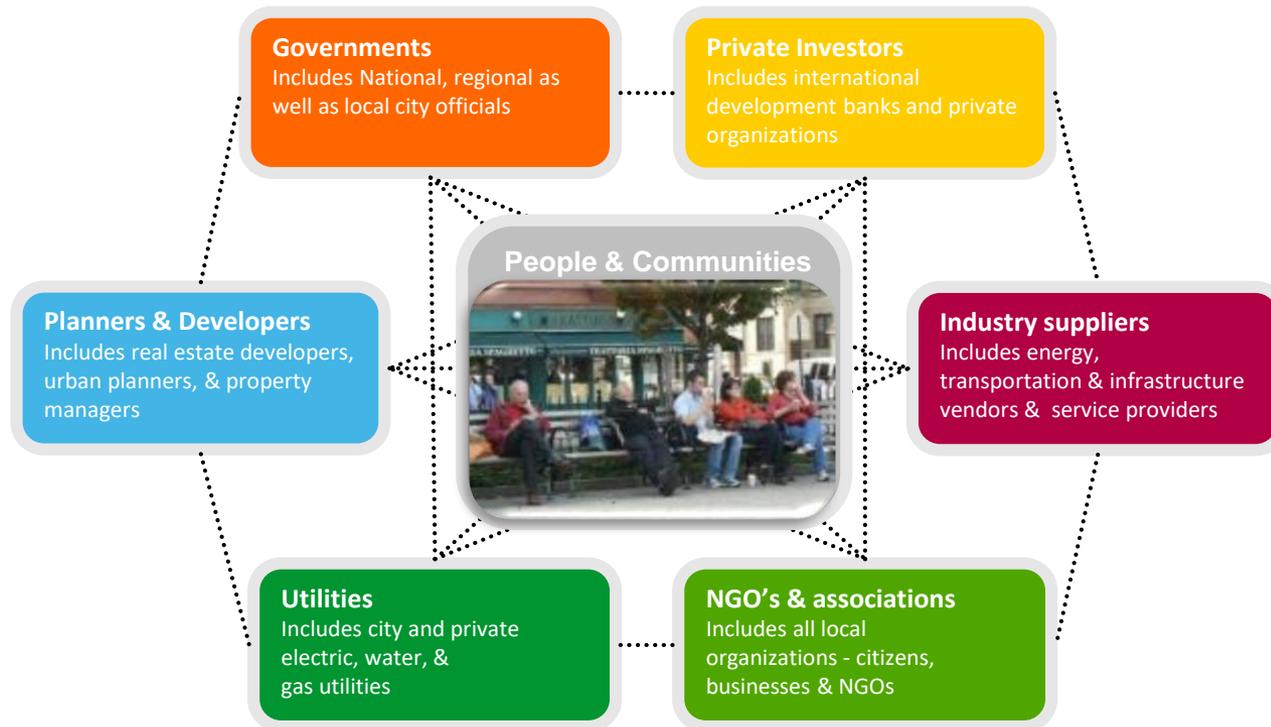


# The (Evolving) Huntsville Team



# Stakeholders' Collaboration

*A Smart City will combine public governance, people ownership and business collaboration*





For more information or to get plugged in, contact chairman Jay Newkirk at (256) 533-4925 or jaynewkirk@att.net

## WHO WE ARE

Our Vision Statement

Energy Huntsville is a volunteer collaborative mobilizing the community to pursue regional and national energy opportunities that leverage our technologies and talent.

We do this by raising awareness, identifying opportunities and providing the networking environment that facilitates the development of successful teams and solutions.

Our success metric: Job creation within the energy sector in the Tennessee Valley.

## WHAT WE DO

Why you should get involved

1. Host monthly themed networking events that provide:
  - Information about immediate and real business opportunities
  - Information about emerging industry trends and opportunities
  - Opportunities to introduce your company, services or expertise
2. Provide a networking environment that encourages relationship building with:
  - Other companies for collaboration and teaming
  - Utility providers, academia, government, and other valuable industry contacts
3. Provide online collaboration tools that offer
  - A complete Energy Huntsville participant directory with contact information, company descriptions, and individual profiles
  - A central hub for posting business opportunities, industry events, and more
4. Provide additional resources and marketing opportunities:
  - Two annual social events per year
  - A company bio and listing in the Energy Huntsville brochure which is actively used by the mayor and other leaders to support economic development efforts in the energy sector

## HOW YOU CAN PLUG IN

The more you get involved the more you benefit

### Operational Committees

*These committees keep us organized, help us provide up to date resources, and work on longer term strategies*

- Advisory Board
- Communication & Events
- Membership & Programs
- Opportunity & Project Tracking
- Standards, Guidelines & Certifications

### Strategic Liaisons

*Representatives from these groups actively participate serving as critical resources and advisors*

- City governments
- County governments
- Utility providers
- Military
- Academia & Education

### Action Teams

*These teams focus on specific areas, discussing real business opportunities, area resources, and potential teaming*

- Facilities/Installation Energy Management
- Metering, Monitoring, and Control
- Energy Information, Tech. Data Center
- Energy Production & Renewables
- Research, Tech Transfer & Product Development
- Energy Sensor Mapping & GIS
- Construction & Re-commissioning
- Community Energy Programs & Grants



# Community Energy Strategic Plan: *The Process*



# Community Energy Strategic Plan: *The Solution*



Community Energy Strategic Planning Example:

Pittsburgh, Pennsylvania

## Focus Areas

- Energy reduction
- Recycling and waste management
- Transportation
- Green building practices
- Engagement & education

- Reveals energy and cost-saving options, saving taxpayers, businesses, and residents money
- Allows for great influence over energy facility siting
- Articulates community vision for others to invest in
- Provides defined guidance through a specific action plan



# The Georgetown University Energy Prize Competition

PRESENTED BY:

OPERATION  
GREEN TEAM

HUNTSVILLE CITY  
SCHOOLS

HUNTSVILLE  
UTILITIES

ENERGY HUNTSVILLE  
INITIATIVE

# TAKE 5

**CHANGE OUT!**  
Pick the 5 most  
used lights in your  
home or office  
and change to LED



**UNPLUG IT!**  
Make vampire  
appliances a  
thing of the past



**SET IT RIGHT!**  
Set thermostat to  
78F Summer  
68F Winter



**CLEAN UP QUICK!**  
Take a 5 minute  
(or less)  
shower



**KEEP IT CLOSED!**  
Close garage doors  
and seal windows

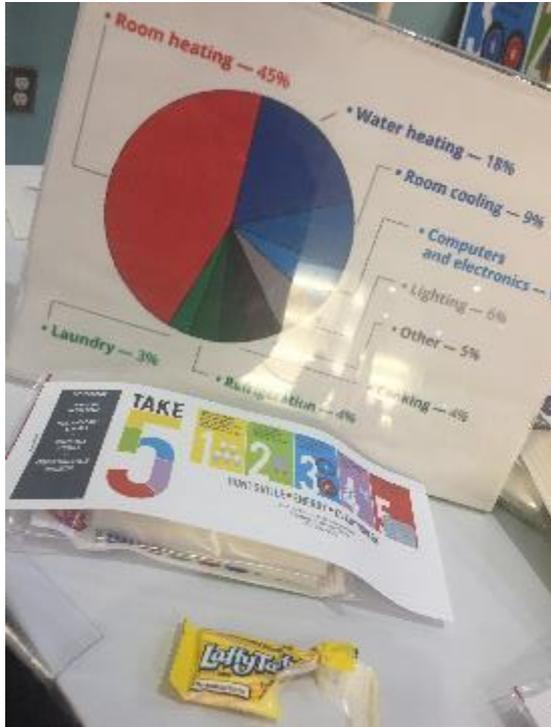


## HUNTSVILLE • ENERGY • EVERYWHERE

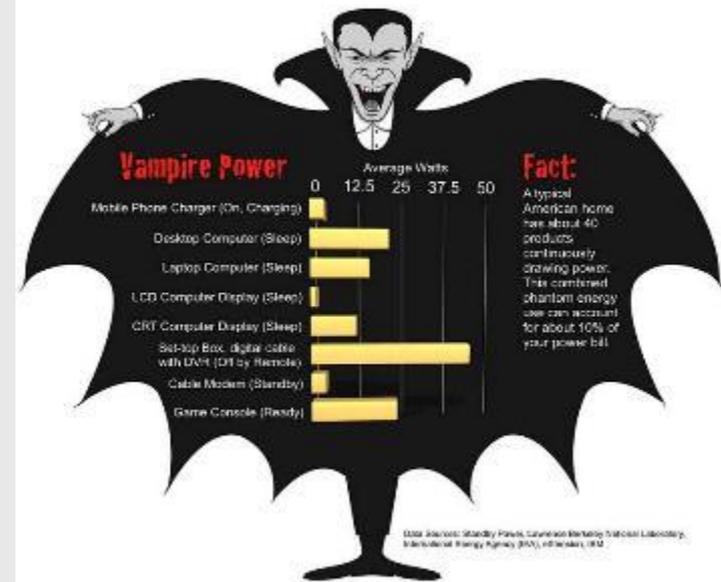
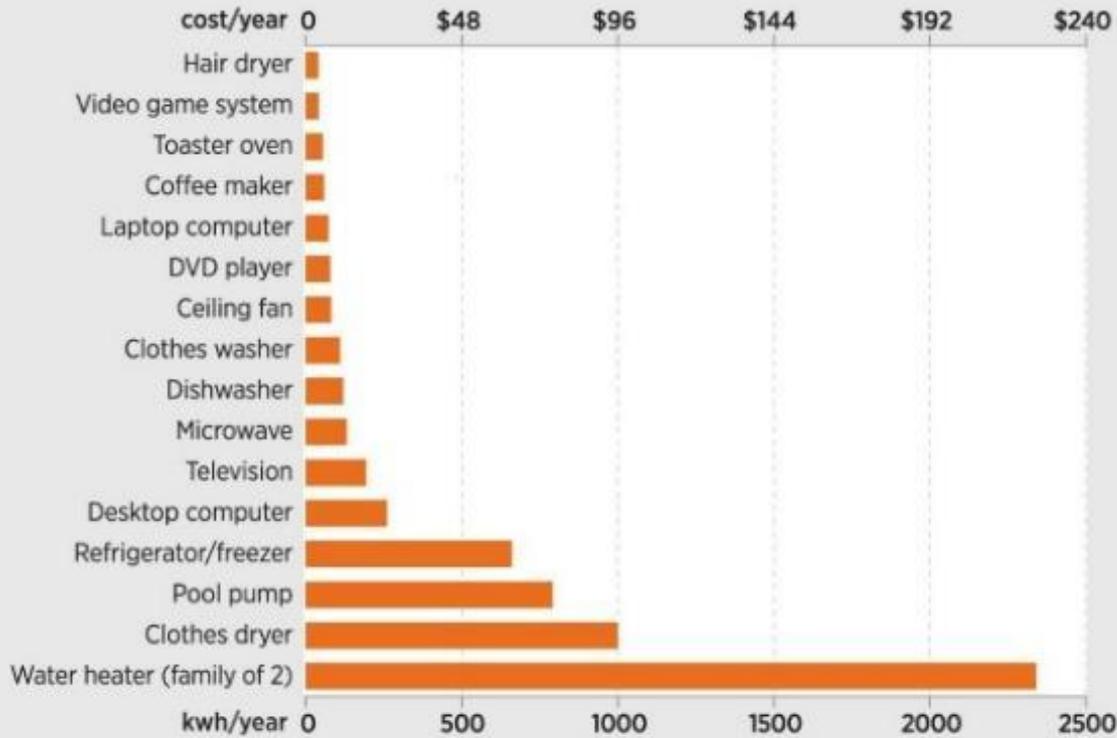
For more information contact  
Operation Green Team  
256.532.5326

Donated Media; GreenPowerUSA; Earthday, High School athletic events, HHA Home Ownership Expo; utility bill insert + videos + social media resulted in

### High Impact Behavioral Changes from Low Cost or Redirected Existing Spends



## How Much Electricity Do Appliances Use?



# The Southeast Sustainable Communities Fund

A project of SSDN and The Kendeda Fund

SSCF has invested over \$3.2 million in the Southeast since 2017.

## Round One (2018-2019)

Buncombe County, NC  
Charleston, SC  
Chattanooga, TN  
Duck Hill, MS  
Huntsville, AL  
Savannah, GA

## Round Two (2019-2020)

Athens-Clarke County, GA  
Cary, NC  
Knoxville, TN  
Nashville, TN  
New Orleans, LA  
Volusia County, FL

# Huntsville, AL

Community-led Support to Fund Energy Retrofits for People with Low-Income

Joy McKee and Andrea Cantrell, City of Huntsville Operation Green Team Fdn.

Project partners: City of Huntsville's Operation Green Team Foundation, Huntsville Utilities, Salvation Army, Huntsville CASA

Investment: \$300,000

Project summary: Project partners are performing energy efficiency retrofits and air quality monitoring for homeowners with low income, while at the same time piloting creative community-driven financing mechanisms to help support ongoing costs of retrofits, and conducting job fairs and trainings for youth and residents of low-income for energy retrofit jobs.

# Round One Grantee Profiles

Buncombe County, NC  
Charleston, SC  
Chattanooga, TN  
Duck Hill, MS  
Huntsville, AL  
Savannah, GA



# Buncombe County, NC

Reducing Peak Energy Demand through Energy Efficiency Retrofits via The Blue Horizon Project

Jeremiah LeRoy, Buncombe County; Bridget Herring, City of Asheville & Jonathan Gach, Blue Horizons Project / Green Built Alliance

Project partners: Buncombe Co.; City of Asheville; Green Built Alliance; Duke Energy; Community Action Opportunities; NCSEA

Investment: \$300,000

Project summary: This project is reducing peak electricity demand through weatherization and energy efficiency upgrades for communities of low-income to successfully decrease peak energy demand and delay the need for a new power plant in Western North Carolina.

## Grid Modernization plan included new fossil fuel infrastructure

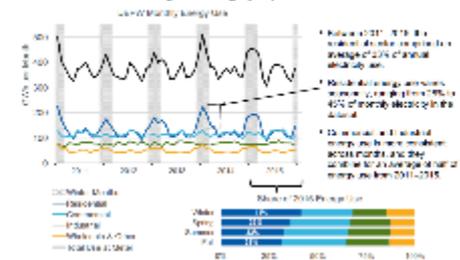
- Retiring our coal plant
- Construction of 2 new gas plants
- Construction of a peaking unit in 2023



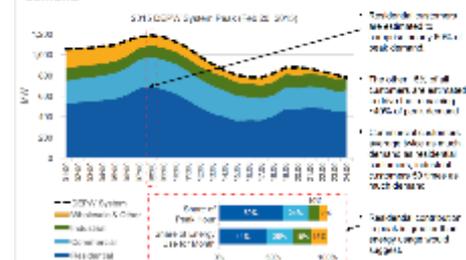
## The Energy Innovation Task Force (EITF)

- A collaboration of local governments, community stakeholders and Duke Energy
- Did a deep dive on community utility use and analysis of peak demand issues
- The analysis identified the primary peak issue as residential space heating during cold winter mornings
- Programmatic focus should be on residential weatherization, specifically for LMI citizens

Residential usage rises significantly in winter, while residential and commercial sector usage are roughly equal in other seasons



On the highest demand days, residential use drives overall peak demand



# Our Traditional Weatherization Models Had Many Barriers

- Utility DSM programs were underutilized or had very poor market penetration
- Little community engagement on program design and implementation
- Referral Systems were not formalized or efficient
- Some program guidelines may restrict other program partners from working on the same home
- Programs operate under different intake and/or eligibility systems
- Health and safety hazards are often unaddressed and may render homes ineligible for weatherization assistance





## **Buncombe County Recommendations/Lessons Learned**

### **Focus on existing resources**

- In Asheville/Buncombe that was Duke Energy DSM: EnergyWise for Home, Smart Saver, and Home Energy House Call

### **Align programmatic expenditures at a local level**

- Establish a learning network of providers and a triaged co-delivery of services
- A coordinated partnership and efficient referral system will save time, increase efficiency and lead to more homes being served

### **Manage and Track Data Cooperatively**

- Share data platforms and common data metrics where practical

### **Go beyond energy and focus on health and safety**

- Incorporate health and safety data in metrics for weatherization activities in order to try and leverage other potential investments

**Relationships are the most valuable commodity we have and  
being a good community partner costs nothing!**

## Touching Base for More Info:

Robin Cox, Ph.D. Huntsville Alabama  
Sustainability Consultant

256-656-2353

[robin@gcaconsulting.biz](mailto:robin@gcaconsulting.biz)

[www.viridianridge.com](http://www.viridianridge.com) and <http://www.southeastsdn.org/project/connections-create-a-more-sustainable-tennessee-valley/>

Jeremiah LeRoy Buncombe County, NC  
Sustainability Officer

828-250-4976

[Jeremiah.LeRoy@buncombecounty.org](mailto:Jeremiah.LeRoy@buncombecounty.org)

<http://www.southeastsdn.org/project/combining-warmth-energy-savings-in-buncombe-county-north-carolina-a-sscf-grantee-highlight/>

Meg Jamison Asheville, NC  
SSDN Executive Director

423-416-0839

[meg@southeastsdn.org](mailto:meg@southeastsdn.org)

<http://www.southeastsdn.org>



# Key Points

- Huntsville, AL developed an innovative community energy strategic plan, which can serve as a model for other communities.
- Primary focus areas included energy reduction, recycling & waste management, transportation, green building practices, and engagement & education.
- A similar initiative within Buncombe County, NC saw significant (and cost-effective) reductions in peak demand.

# Register for the Better Buildings Summit



- **WHEN**: July 10-11, 2019
- **WHO**: Better Buildings partners & stakeholders, & ~200 speakers with proven solutions
- **WHAT**: 2 days of sessions, networking, & sharing the most successful energy efficiency strategies
- **WHERE**: Arlington, VA across from Washington D.C.
- **INFO**: [energy.gov/betterbuildings/summit](https://energy.gov/betterbuildings/summit)

It only happens once a year

# Explore the Residential Program Solution Center

Resources to help improve your program and reach energy efficiency targets:

- [Handbooks](#) - explain *why* and *how* to implement specific stages of a program.
- [Quick Answers](#) - provide answers and resources for common questions.
- [Proven Practices](#) posts - include lessons learned, examples, and helpful tips from successful programs.
- [Technology Solutions](#) **NEW!** - present resources on advanced technologies, **HVAC & Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.



<https://rpssc.energy.gov>

# Thank You!

Follow us to plug into the latest Better Buildings news and updates!



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[Better Buildings LinkedIn](#)



[Office of Energy Efficiency and Renewable Energy Facebook](#)

Please send any follow-up questions  
or future call topic ideas to:

[bbresidentialnetwork@ee.doe.gov](mailto:bbresidentialnetwork@ee.doe.gov)